

**Presentation**

# **Transit Development Plan for Lincoln, Nebraska**

**September 2006**

## **Technical Memorandum 6: *Service Diagnostics and Preliminary Evaluation***



**Urbitran Associates, Inc.**  
in association with:  
**KFH Group, Inc.**  
**AJM Consulting**

## **Data Inputs 1**



- **Service Area Characteristics**
  - Demographics
  - Land Use and Trip Generators
  - Street Network
- **StarTran and UNL Bus Service Descriptions**
  - Descriptive Inputs
  - Operating Data
  - Financial Data
  - Detailed StarTran On/Off Counts
  - StarTran On-Time Performance Data

## **Data Inputs 2**



- **Public Outreach**
  - Drop-Ins
  - Public Listening Sessions
  - Stakeholder Interviews
  - On-Board Surveys
  - Driver Meetings
- **Peer and Trend Data**

## **Methodology 1**



- **Develop Preliminary Service Standards**
  - Coverage
  - Convenience
  - Fiscal Condition
  - Passenger Comfort
- **Evaluate Network Performance**
  - Service Effectiveness
  - Financial Efficiency
  - Cost Effectiveness
  - Ordinal Ranking



## Methodology 2



- **Evaluate Overall Route Performance**
  - Design and Directness
  - Ridership by Time of Day
  - Bus Stop Activity
  - On-Time Performance
  - Issues and Opportunities
- **Evaluate Route Performance, Issues and Opportunities**
- **Summary of Preliminary Findings/Issues and Opportunities**

## Develop Preliminary Service Standards



Category	Service Coverage Standards
Availability	• Residential areas
	-90% of population within ¼ mile of a bus route
	-Route spacing guide presented in Table 6-2
	• Major activity centers
	-employers or employment concentrations of 200 or more employees
	-health centers
	-middle and high schools
	-colleges/universities
	-shopping centers of over 25 stores or 100,000 square feet of leased retail space
	-social service/government centers
Frequency	• Arterial Routes
	-30 minute peak
	-60 minute off-peak
	• Crosstown/neighborhood/shuttle services
	-60-minute all day service
Span	-5 AM to 10 PM on weekdays
	-6 AM to 7 PM on Saturdays
Directness	-Maximum 25% of transfer rate

## Develop Preliminary Service Standards



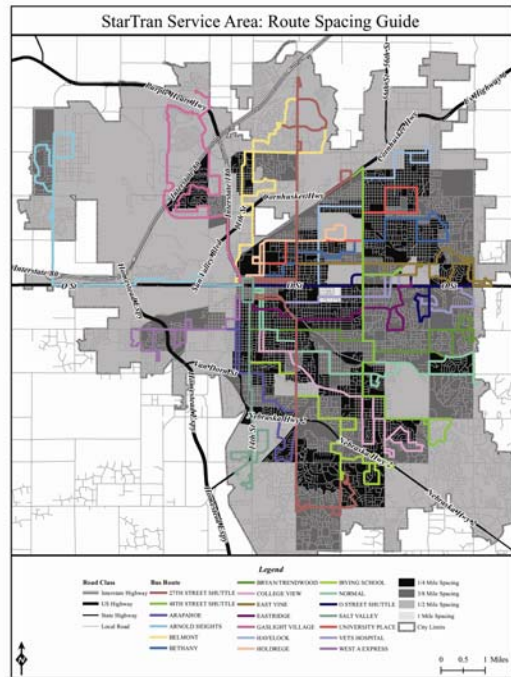
<i>Category</i>	<i>Patron Convenience Standards</i>
Speed	-Regular routes maximum of 15 MPH
	-Maximum of 10 MPH for Downtown Shuttle
	-12-18 MPH for outlying services depending on layout
Loading	-25% standees for short periods acceptable
Bus Stop Spacing	-5 to 7 blocks per mile in core (every other block)
	-Fringe 4 to 5 per mile, as needed based on land uses
Dependability	-No missed trips
	-95% on-time service (0 to 5 minutes late)
	-No trips leaving early
Road Call Ratio	-4,000 to 6,000 miles per road call

## Develop Preliminary Service Standards

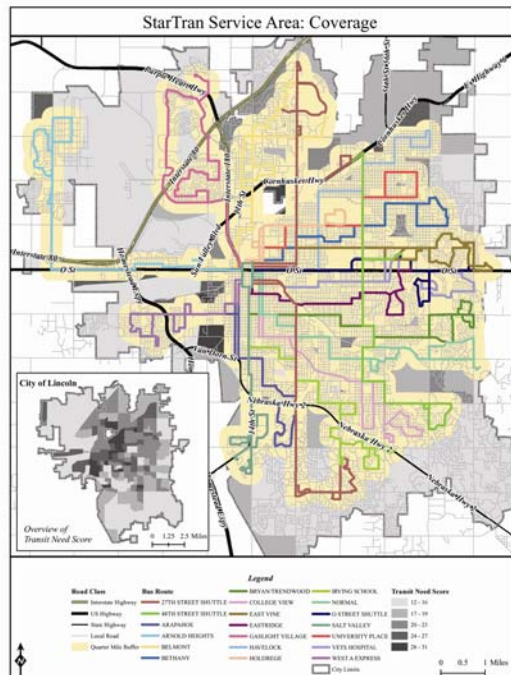


<i>Category</i>	<i>Fiscal Condition Standards</i>
Fare Structure	-Qualitative criteria
Farebox Recovery	-Significantly alter routes less than 60% of average (16% is average)
	-Review and modify routes between 60% and 80% average
Productivity (Pass./Mi.)	-Significantly alter routes less than 60% of average (1.26 pass/mi is average)
	-Review and modify routes between 60% and 80% average
<i>Category</i>	<i>Passenger Comfort Standards</i>
Waiting Shelters	-25 or more boardings
Bus Stop Signs	-Denote StarTran, contact information, and route
Revenue Equipment	-Clean and good condition
Public Information	-Timetable, maps, advertising

## Develop Preliminary Service Standards

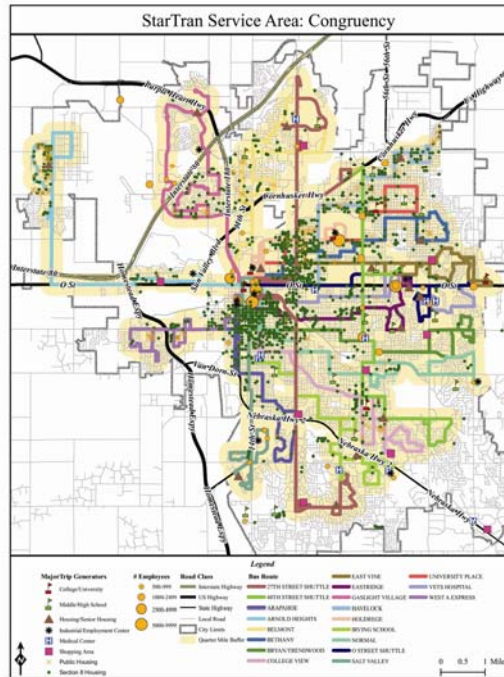


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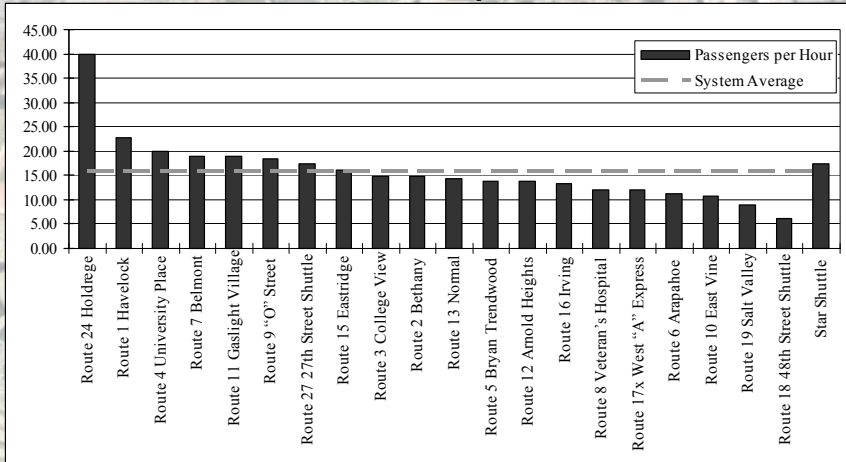


Route	% On-Time	Route	% On-Time
Route 1 Havelock	90%	Route 12 Arnold Heights	63%
Route 2 Bethany	71%	Route 13 Normal	78%
Route 3 College View	78%	Route 15 Eastridge	88%
Route 4 University Place	91%	Route 16 Irving	85%
Route 5 Bryan Trendwood	93%	Route 17x West "A" Express	67%
Route 6 Arapahoe	89%	Route 18 48th Street Shuttle	N/A
Route 7 Belmont	87%	Route 19 Salt Valley	70%
Route 8 Veteran's Hospital	54%	Route 24 Holdrege	89%
Route 9 "O" Street	41%	Route 27 27th Street Shuttle	65%
Route 10 East Vine	95%	Star Shuttle	87%
Route 11 Gaslight Village	84%	Average	78%

## Evaluate Overall Route Performance



### Weekday



## Evaluate Overall Route Performance

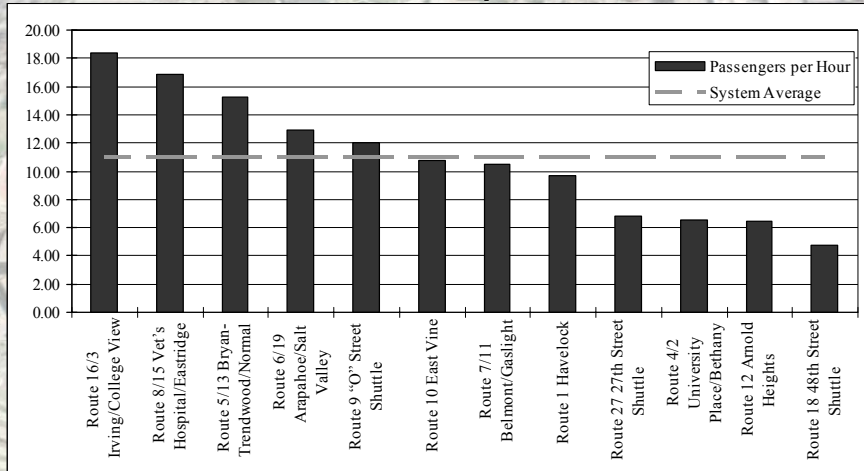


Weekday Rank	Route	Weekday Rank	Route
1	Route 24 Holdrege	11	Route 8 Veteran's Hospital
2	Route 1 Havelock	12	Route 5 Bryan Trendwood
3	Route 4 University Place	12	Route 13 Normal
4	Route 7 Belmont	14	Route 17x West "A" Express
5	Route 15 Eastridge	15	Route 16 Irving
6	Route 9 "O" Street	16	Route 12 Arnold Heights
6	Route 11 Gaslight Village	17	Route 6 Arapahoe
8	Route 3 College View	18	Route 10 East Vine
8	Route 27 27th Street Shuttle	19	Route 19 Salt Valley
10	Route 2 Bethany	20	Route 18 48th Street Shuttle

## Evaluate Overall Route Performance



### Saturday



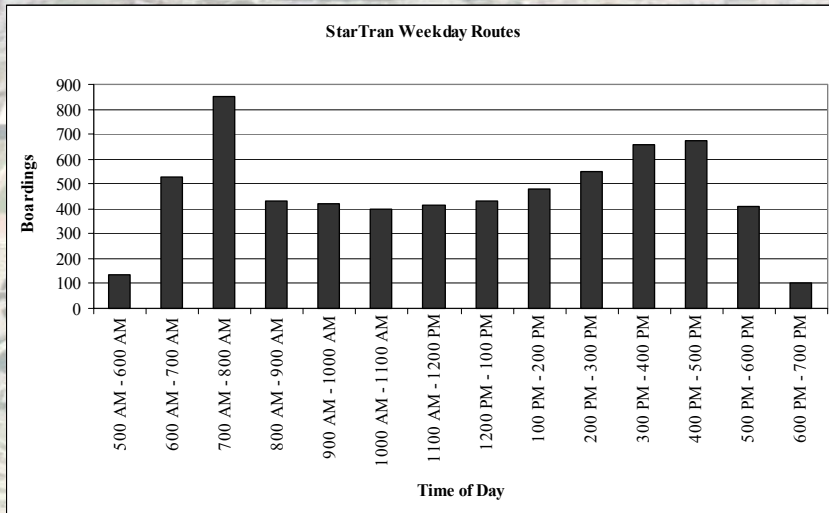
## Evaluate Overall Route Performance



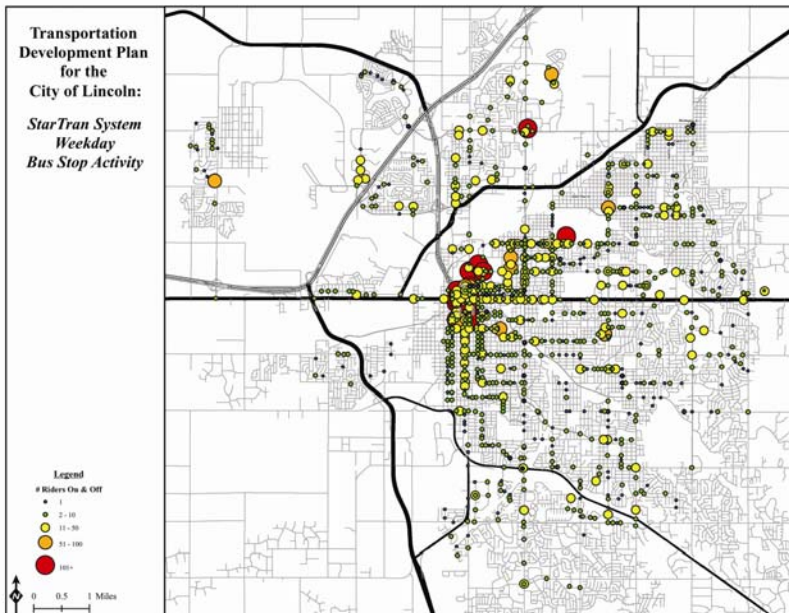
Saturday Rank	Route
1	Route 8/15 Vet's Hospital/Eastridge
1	Route 16/3 Irving/College View
3	Route 5/13 Bryan-Trendwood/Normal
3	Route 6/19 Arapahoe/Salt Valley
5	Route 9 "O" Street Shuttle
5	Route 10 East Vine
7	Route 1 Havelock
7	Route 7/11 Belmont/Gaslight
9	Route 4/2 University Place/Bethany
9	Route 12 Arnold Heights
9	Route 27 27th Street Shuttle
12	Route 18 48th Street Shuttle



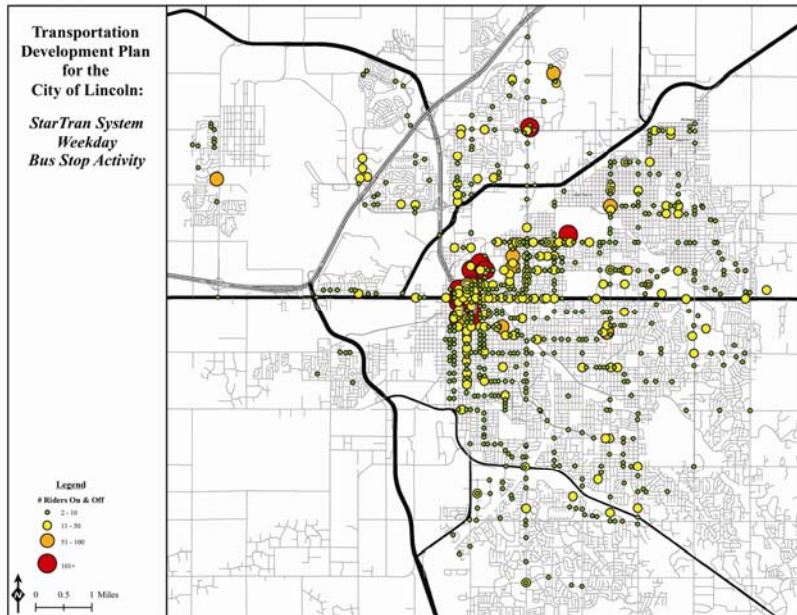
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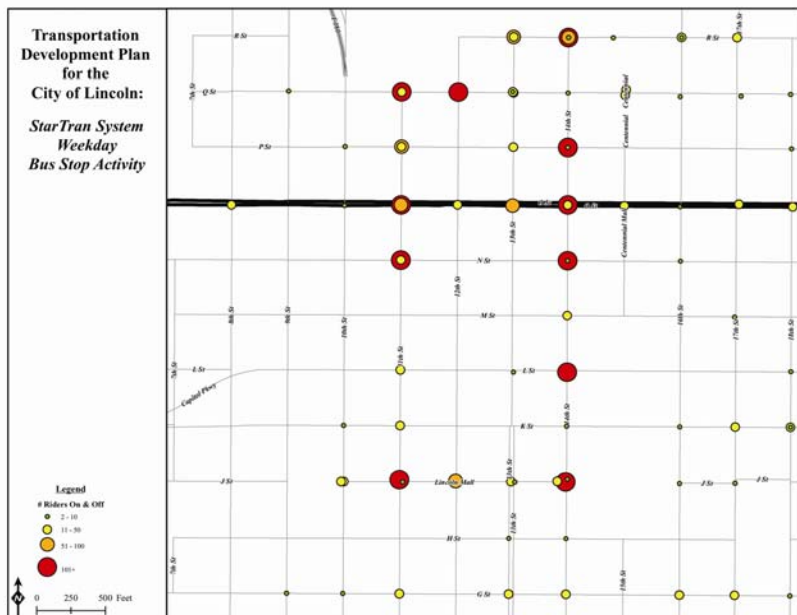
## Evaluate Route Performance, Issues, and Opportunities



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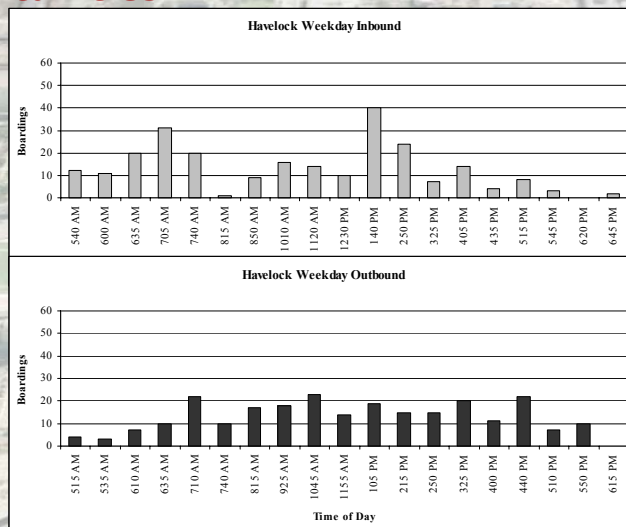


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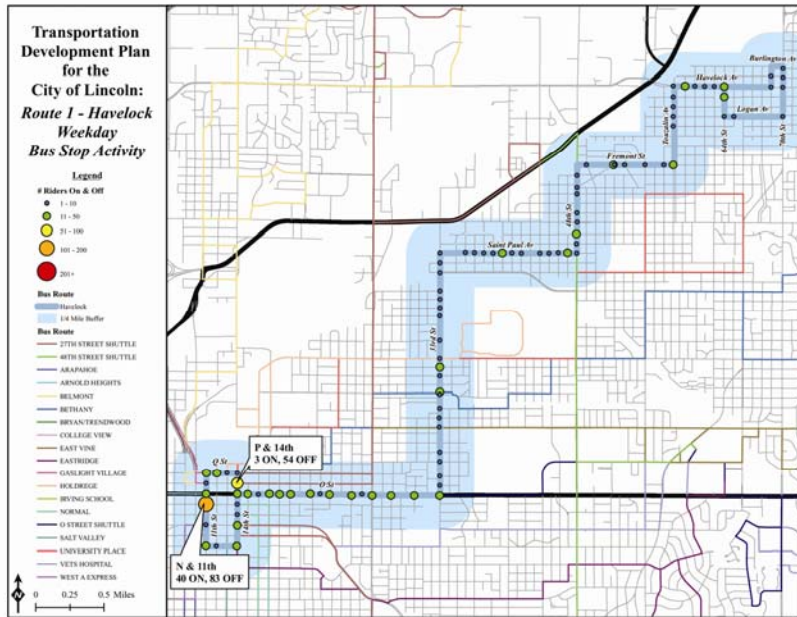
<i>Route 1 Havelock</i>	
<u>Factor/Indicator</u>	<u>Weekday</u>
Ridership	493
Revenue Hours	22
Revenue Miles	306
Operating Speed (MPH)	14.1
Operating Cost	\$1,347.20
Farebox Revenue	\$300.73
Passengers per Mile	1.61
Passenger per Hour	22.67
Cost per Mile	\$4.40
Cost per Passenger	\$2.73
Farebox Recovery	22%
Cumulative Rank Score	5
Rank	2

## Evaluate Route Performance, Issues, and Opportunities





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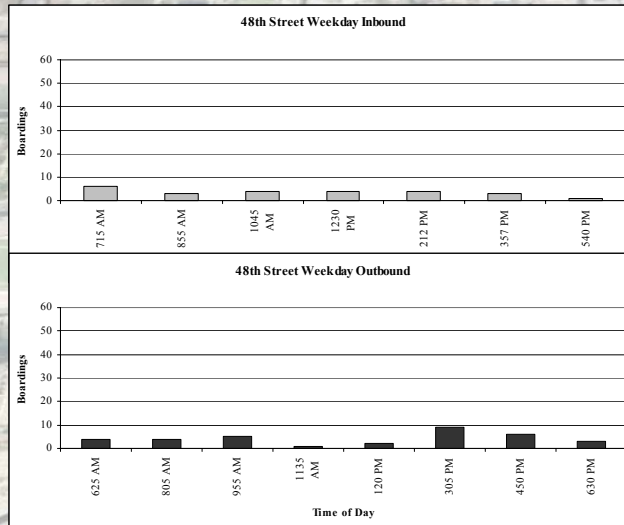


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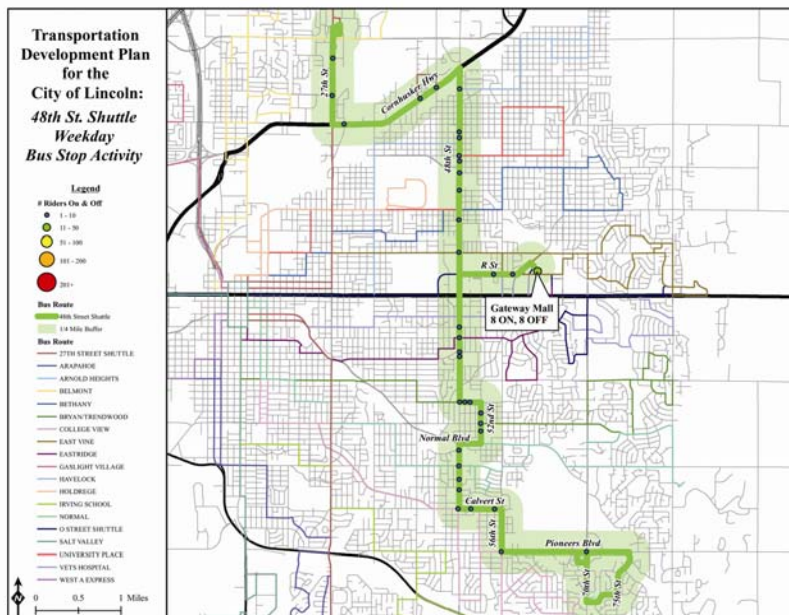


Route 18 48th Street Shuttle	
Factor/Indicator	Weekday
Ridership	82
Revenue Hours	14
Revenue Miles	230
Operating Speed (MPH)	17.0
Operating Cost	\$841.15
Farebox Revenue	\$50.02
Passengers per Mile	0.36
Passenger per Hour	6.04
Cost per Mile	\$3.65
Cost per Passenger	\$10.26
Farebox Recovery	6%
Cumulative Rank Score	40
Rank	20

# Evaluate Route Performance, Issues, and Opportunities



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## **Summary of Preliminary Findings/Issues and Opportunities**



- **StarTran has some strengths upon which to build**
  - Service coverage is excellent but may be excessive
  - Ridership activity is strong along key arterials, at the UNL campus, and downtown
  - StarTran has a solid core of both 'choice' and 'captive' riders
- **StarTran has some significant issues**
  - Directness
  - Balance of loads and frequency/span of service
  - On-time performance
  - Frequent excess capacity
  - Farebox recovery
  - Excessive downtown mileage and coverage on the 'loop'
- **Next Steps: Develop and assess service plan options up to and including a re-design of the service network**